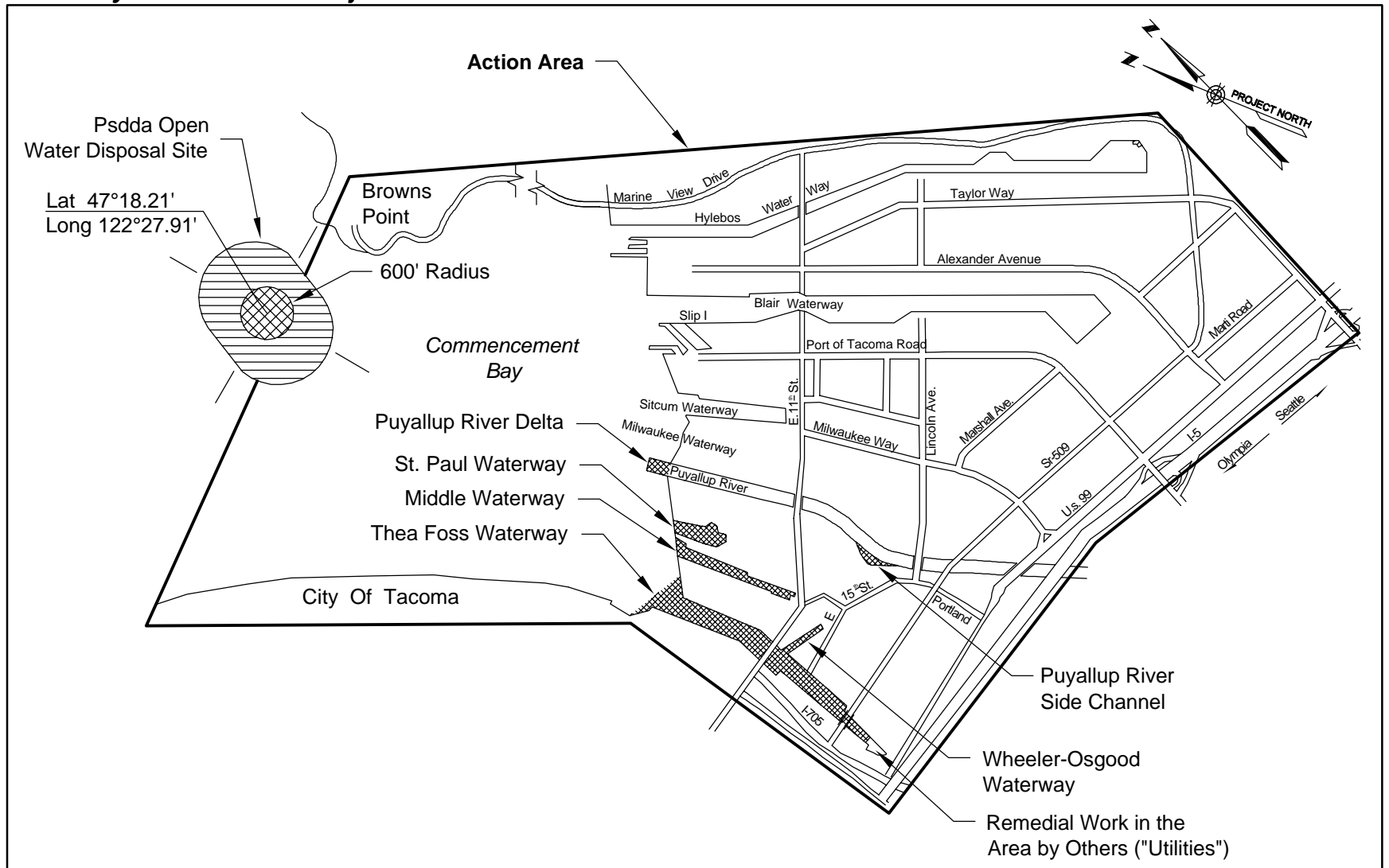
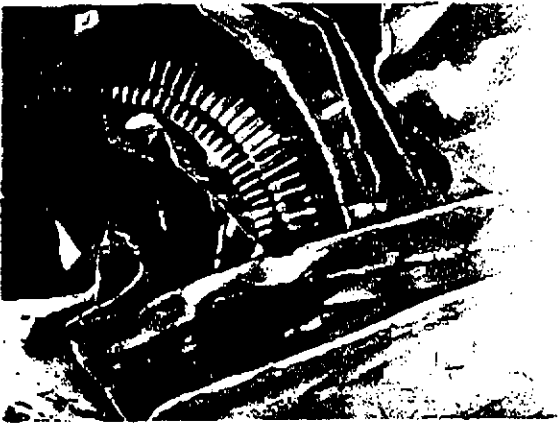


Vicinity Map
Thea Foss and Wheeler-Osgood
Waterways Remediation Project





*Biological Assessment Addendum
Thea Foss and Wheeler-Osgood
Waterways Remediation Project
Commencement Bay Nearshore/
Tideflats Superfund Site
Tacoma, Washington*

May 23, 2003



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acres. Roughly 14.28 acres of intertidal and littoral habitat will be affected by excavation of the St. Paul Waterway to create the CDF.

7.0 IMPACT MINIMIZATION MEASURES

Federal, state, and local permits contain conditions that are intended to reduce the potential for short-term effects from construction activities. Although the remediation and mitigation of Thea Foss and Wheeler-Osgood Waterways will not result in the need to obtain federal or state permits (CERCLA action are exempt from permitting requirements), the project will comply with the substantive permitting requirements.

7.1 Best Management Practices

Best management practices (BMPs) are employed to reduce the potential for construction-related impacts on listed species and their habitats. The following will be incorporated into the remedial design for the Thea Foss/Wheeler-Osgood Waterways:

7.1.1 Dredging Best Management Practices

- The construction contractor will ensure that no fuel, garbage, or debris enters the waterway from the dredge, receiving barge, or other vessels associated with the project.
- Dredging will be conducted to the extent practicable, using an environmental clamshell bucket that is closed, vented, and sealed to minimize the release and redistribution of dredged material to the water column during dredging.
- If mechanical dredging is selected as the alternative for sediment removal, the following procedures will be implemented to minimize impacts to water and sediment quality to the extent practicable. These procedures include the following:
 - "Sweeping" the post-dredge surface to smooth contours will not be allowed; and
 - Stockpiling of material on the bottom will not be allowed (i.e., each time the bucket is closed it will be brought to the surface).

- After each construction season, all construction equipment will be properly decontaminated to prevent potential spreading of contaminated sediment.
- To avoid slope instability and impacts to littoral habitats during dredging, material will be cut downward from the embankment toe at a slope of 2H:1V to the specified dredge depth. This reduces the risk of impacts to the existing slopes and littoral habitats will not occur from dredging activities at the toe of the slope.

7.1.2 Sand Cap and Habitat Mix Placement Best Management Practices

- Materials will meet project specifications regarding fines content so as to minimize the potential for elevated turbidity in receiving waters during placement.
- Materials will be uniformly discharged as a stream of material, as opposed to being abruptly discharged, in order to provide for uniform bottom coverage and minimize impacts to the receiving surface.
- Short-term impacts to water quality will be minimized during cap placement by placing material in a controlled manner, minimizing the free fall distance of the capping material and placing material during low tides, whenever possible.

7.1.3 Spill Prevention Best Management Practices

- During construction, all prudent and necessary steps will be taken to avoid discharge of oil, fuel, or chemicals into waters or onto land with a potential for entry into waters.
- Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., on construction equipment will be checked regularly for drips or leaks, and will be maintained and stored properly to prevent spills into waters. Proper security will be maintained to prevent vandalism.
- In the event of a discharge of oil, fuel, or chemicals into waters, or onto land with a potential for entry into waters, containment and cleanup efforts will begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup will include proper disposal of any spilled material and used cleanup materials.

- Spills into waters, spills onto land with a potential for entry into waters, or other significant water quality impacts will be reported immediately to the Department of Ecology's Southwest Office.
- The contractor will be responsible for the preparation of a Spill Prevention Control, and Countermeasure Plan to be used for the duration of the project. This ensures that care would be taken to prevent any petroleum products, chemicals, or other toxic or deleterious materials from entering the water.

7.1.4 Piling Removal Best Management Practices

- Containment booms will be deployed around in-water piling removal areas to contain any potential debris or petroleum sheens released to the waterway as the result of pile disturbance.
- If debris or spill material accidentally enters the waterway, activities will be taken to remove the material. All debris or spill material will be properly disposed of at an approved disposal facility.
- As the piles are pulled from the subsurface, they will be quickly placed onto a receiving barge to minimize potential releases of creosote, petroleum sheens, and turbidity to the waterway. Pilings will not be rinsed or washed in any way. Piles will be recycled or properly disposed of at an approved upland disposal facility.
- All areas where pilings are broken or cut off, will be subsequently covered with a minimum of 2 feet of cap or riprap with habitat mix.
- Creosote treated pilings will only be pulled from below the waterline during the August 1 through February 14 work window for the protection of migrating juvenile salmonids.

7.1.5 Pile Driving Best Management Practices

- Only steel, AZT-treated timber, or concrete pilings will be used when piling replacement is necessary.
- A vibratory hammer will be used to set and drive pilings instead of an impact hammer, wherever practicable.
- Pile driving activities will occur from August 1 through February 14. However, based on review of project specific activities, project location, and existing data of juvenile salmonid use in Commencement Bay, work may be

permitted from July 16 through July 31 under the conditions that construction activities shall occur no more than 12 hours in any 24-hour period and no more than 5 days in any 7-day period.

7.2 Conservation Measures

The following list summarizes conservation measures that are applied to projects in marine and estuarine waters and have been incorporated into the remedial design for the Thea Foss and Wheeler-Osgood Waterways to avoid and/or minimize short-term effects to listed threatened species during construction activities.

- Dredging activities will be designed to avoid conversion of littoral habitat to subtidal habitat. Proposed remediation and mitigation activities will result in a net gain of littoral habitat compared with existing conditions.
- Dredging, capping, habitat construction, and slope rehabilitation will be performed outside of the peak juvenile salmonid outmigratory periods for the protection of juvenile salmonids and bull trout.
- Compliance with the project's EPA/Ecology Water Certification requirements for chemical constituents, turbidity, DO, and other parameters will limit any adverse impact to water quality to a defined mixing zone.
- Dredging controls will be used to minimize potential water quality impacts.
- Acute marine water quality criteria will be met during dredging at the compliance boundary established by EPA. Nevertheless, even with engineering and compliance monitoring controls, the potential exists for degraded water quality conditions during construction to adversely impact listed salmonid species on a localized, periodic, and temporary basis.
- Compliance Monitoring and Contingency Actions will be performed during dredging activities in accordance with the forthcoming EPA/Ecology Water Certification.
- Design production rates will be reduced to the extent practicable to limit exceedances of acute marine water quality criteria to within the established mixing zone.
- Dredge timing will be modified to the extent practicable to limit exceedances of acute marine water quality to within the established mixing zone.

- During mechanical placement of fill material within the CDF, the containment berm will be at an elevation of -4 feet MLLW or shallower to provide a sill to aid in the retention of material deposited within the CDF. For hydraulic placement of fill material, the containment berm will completely enclose the CDF; effluent waters will be release through a weir system.
- Relevant marine water quality criteria will be met during disposal/placement operations at the boundary of the established mixing zones.
- The level of mitigation/restoration provided under the sediment disposal option will provide affirmative conservation measures that will result in a net improvement of salmon habitat conditions and contribute to the restoration of salmon populations in the Puyallup River/Commencement Bay system.
- The addition of select substrates (e.g., habitat mix) as part of littoral capping will assist in providing suitable habitat for prey items of juvenile salmonids within the interstices of riprap armoring.
- The Contractor will be required to submit an environmental protection plan which will contain sections for contamination prevention, closure, and cleanup, and erosion and turbidity control as they pertain to the different project elements. This plan will be subject to approval by the EPA.
- The Contractor will prepare a Construction Quality Control Plan, which will present the system through which the Contractor assures that the requirements of the contract are being complied with. This plan will be subject to approval by the EPA.
- A work plan will be prepared by the Contractor and submitted to the City and the EPA for review and approval prior to the start of construction.
- If dredging and or other construction operations are found not to be in compliance with the above-mentioned provisions of the work plan, or they result in conditions causing distressed or dying fish, the operator will immediately take the following activities:
 - Cease operations at the location of the incident.
 - Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.